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no. 1
1943



MORE PRODUCTION THROUGH TRAINING

The
**TRAINING
WITHIN INDUSTRY
PROGRAM**

January 1943
(Originally issued January 1942)

Bulletin No. 1

**TRAINING
WITHIN
INDUSTRY**

**WAR
MANPOWER
COMMISSION**

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TRAINING WITHIN INDUSTRY PUBLICATIONS

*Bulletins**

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| 1. The Training Within Industry Program. | 4-D. How to Improve Job Relations. |
| 2. Upgrading. | 4-E. How to Set up a Plant Training Program. |
| 2-C. How to Break in a Man on a New Job. | 4-F. How to Select New Supervisors. |
| 3. Developing All - Round Skilled Craftsmen through Apprenticeship. | 6. Tying in Pre-Employment Training with On-the-Job Training. |
| 4. Strengthening the Managerial Organization. | 6-A. Supplementary Instruction for Upgrading. |
| 4-A. Expanding the Managerial Organization. | 7. Increasing War Production Through Employment of Women. |
| 4-B. Improving Supervisors' Knowledge of Responsibilities. | 8. Introducing the New Employee to the Job. |
| 4-C. How to Improve Job Methods. | 8-A. Safety on the Job for the New Employee. |

*Examples of Successful Training**

Meeting the Need for Skilled Workers in a New Airplane Engine Plant.

Training for Quick Production in Heavy Manufacture.

Organizing Manpower for a Small-Arms Ammunition Plant.

Upgrading in a Large Steel Corporation.

Training for the Electrical Department of a Shipyard.

Training for Arc Welding and Acetylene Burning in a Shipyard.

Training for the Toolroom and the Machine Repair.

*Any publication listed above is available without charge on application to the nearest Training Within Industry District Office. See pages 8-11 for locations.

Send orders to Superintendent of Documents, Washington, D. C.

Job Instruction (Western Electric Company), 10 cents.

An Introduction to Shipbuilding (Bethlehem Steel Company), 20 cents.

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The PROGRAM

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THE Training Within Industry Program was established in August 1940 by the National Defense Advisory Commission and was continued under the Office of Production Management and then the War Production Board. By Presidential order on April 18, 1942, Training Within Industry was transferred to the Federal Security Agency to function as a part of the new War Manpower Commission which now handles all problems of labor supply and training.

Underlying PURPOSE of "TWI" activity is:

To assist war production industries to meet their manpower needs by training within industry each worker to make the fullest use of his best skill up to the maximum of his individual ability, thereby enabling production to keep pace with war demands.

Training Within Industry deals exclusively with industry's own training responsibilities. It recommends that all war production plants, consistent with the terms of their existing labor agreements, give balanced and appropriate attention to the following phases of in-plant training:

1. *UPGRADING* of all classes of personnel as their experience and abilities warrant, through planned job progression, job rotation, and intensive supplementary instruction both on and off the job. Each plant should take stock of the talent and experience of its own personnel before employing new men and women.
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2. Development of *PRODUCTION SPECIALISTS* through intensive instruction on the job in basic operations.
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3. Development of all-round *SKILLED MECHANICS* through trade apprenticeship, in accordance with Federal standards, separate from production worker training, for the purpose of developing a predetermined, limited number of all-round journey-man mechanics.
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4. Development of *SUPERVISORS* through careful selection, assignment of supervisory duties of increasing responsibility, and provision for related organized help through discussions and conferences, under both plant and outside auspices, dealing with methods of instruction, methods of developing better ways of doing a job, methods of improving working relationships, and knowledge of responsibilities.
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HOW "TWI" ASSISTS WAR PRODUCTION INDUSTRY

It maintains a field force with offices in 22 districts throughout the United States, as listed in this bulletin. It is staffed by training and personnel specialists, many of whom are loaned by their companies for part-time or full-time work.

T. W. I. Advises

Training Within Industry renders specific advisory assistance to war production industries in inaugurating and improving programs which they carry on within their own plants, at their own expense. There is no authority to enter a plant on any basis other than with management's cooperation. Four general types of advisory assistance, listed below, apply in most cases and are adapted to fit conditions in each specific plant:

1. Identification of training needs and recommendation of training programs to fill such needs.
2. Aid in setting up a program within a plant to meet its needs.
3. Clearing house on experience of other employers who have met their training problems. This is cleared through "TWI" headquarters and its field organization.
4. Recommending the most effective use of tax-supported employment and training agencies of the State and Federal governments. Only through interpreting job requirements and the needs of industry to these agencies and interpreting their facilities to industry can maximum results be obtained from preemployment and supplementary instruction.

T. W. I. Conducts

In addition to the above advisory assistance, the Training Within Industry Division conducts specific intensive training programs for the development of potential, newly appointed, and experienced supervisors and training directors. The programs for supervisors require 10 hours, and for training directors 48 hours.

Job Instruction Training gives the supervisor practice in how to "break in" men on new jobs.

Job Methods Training shows the supervisor how to simplify and improve methods of doing a job.

Job Relations Training gives the supervisor pointers and practice in how to work with people in a way that gains cooperation and promotes teamwork.

Training of Training Directors gives intensified coaching in how to operate and improve complete, plant-wide training programs.

The **POLICY** *approved by both Management and Labor*

“LEARN BY DOING — PRODUCE WHILE LEARNING”

IN this emergency, as well as in normal times, it is good American practice and efficient business for each worker to make the fullest use of his best skill up to the maximum of his individual ability. Only through such use of the intelligence and skill of the Nation's manpower can production keep pace with war needs.

1. Additional workers should not be trained unless locally available workers of equal skill have been absorbed.
2. There are normal losses from among skilled workers due to advancement into supervisory positions, changes to other occupations, sickness, death, and retirement. These losses go on continuously, and it is necessary to bring along well-trained workers to replace them. In addition, there is need to make up for the lack of apprentice training during the past 10 years. These are the reasons why organized apprenticeship programs are so important now.

There are two important phases of apprentice training:

- (a) A definitely planned program of experience, scheduled and assigned step by step to enable the apprentice over a predetermined time to acquire skill in various kinds of skilled work in a trade.
- (b) For every skilled job there is related technical matter, much of which can best be taught off the job. To be effective, this related instruction must be very closely tied into the current job experience. Practice, related theory, and technical knowledge must go hand in hand. Workers, employers, and technical educators should collaborate in determining what shall be included in this instruction and how it can best be related to the work experience.

The proportion of apprentices to be trained can best be determined in local areas in numbers and programs agreed upon in joint conferences between management and interested groups of employees or by agreements arrived at by collective bargaining units.

3. In a less formal way, many workers acquire a breadth of experience by learning one job at a time and becoming skilled in that, and advancing to a higher grade of work when opportunity permits. In an upgrading program the time cannot be definite; it is controlled by available opportunities, depending upon production programs and specific vacancies as they occur. This differs from an apprenticeship program where the opportunity is controlled by advance agreement. Therefore, while craftsman experience may be gained by an apprentice in from 3 to 4 years, it may take the production specialist two or three times as long, or longer, to acquire corresponding skill and versatility through an upgrading program, and, of course, many will remain in a specialized occupation.

In times of rapid expansion when there is a shortage of skilled workers, there is no choice but that of using inexperienced workers from other kinds of work or young people without any work experience but with good orientation background gained in public vocational schools during pre-employment training. Through intensive instruction on the job they must then be brought to their highest skill on a limited

operation in the shortest possible time. Advancement into more skilled work should always be made from among employees of longer experience on jobs which are good foundations for the higher skills. Attempts should not be made to displace all-round skilled workers by narrowly skilled specialists.

4. Where there is a collective bargaining agreement the employees' elected representatives should work with management in the establishment of plant training programs.

5. Management has a twofold responsibility: Foremen, instructors, and experienced workers must assist less experienced workers in acquiring new skills; and as far as possible they should see that employees who have the desire and capacity for advancement be not kept indefinitely on jobs requiring skill in

single operations. The supervisor therefore has the responsibility of developing his men and should acquire special skill in instruction just as he must acquire the skill of maintaining good relations with his men and the skill of improving technical production.

Apprenticeship, upgrading, and supervisory training programs within industry are greatly implemented by making available opportunities for individuals to get instruction and related knowledge which enable them to fit themselves for advancement. Whether these facilities are made available by public educational institutions, employers or organized labor groups, it is essential that there be continuous consultation between workers, management, and educators. Only through such cooperation can the instruction be of immediate practical value.

Such philosophy, such practices, and such consultation should result in well-balanced training programs, and bring about an orderly and an effective approach to creating and maintaining a supply of competent workers available to meet the rapidly increasing needs of war industry. Training Within Industry promotes these policies.

APPROVED ON AUGUST 21, 1942
MANAGEMENT-LABOR POLICY COMMITTEE
WAR MANPOWER COMMISSION

R. CONRAD COOPER,
Wheeling Steel Corporation.

H. A. ENOCHS,
The Pennsylvania R. R. Co.

FRANK P. FENTON,
American Federation of Labor.

JOHN P. FREY,
American Federation of Labor.

LT. COL. KENNETH GARDNER,
N. Y. Shipbuilding Corp.

R. E. GILLMOR,
Sperry Gyroscope Co., Inc.

CLINTON S. GOLDEN,
United Steel Workers of America.

JOHN GREEN,
Industrial Union of Marine and Shipbuilding Workers of America.

R. RANDALL IRWIN,
Lockheed Aircraft Corporation.

GEORGE MASTERSON,
United Association of Journeymen Plumbers and Steamfitters.

WALTER P. REUTHER,
United Automobile, Aircraft, and Agricultural Implement Workers of America.

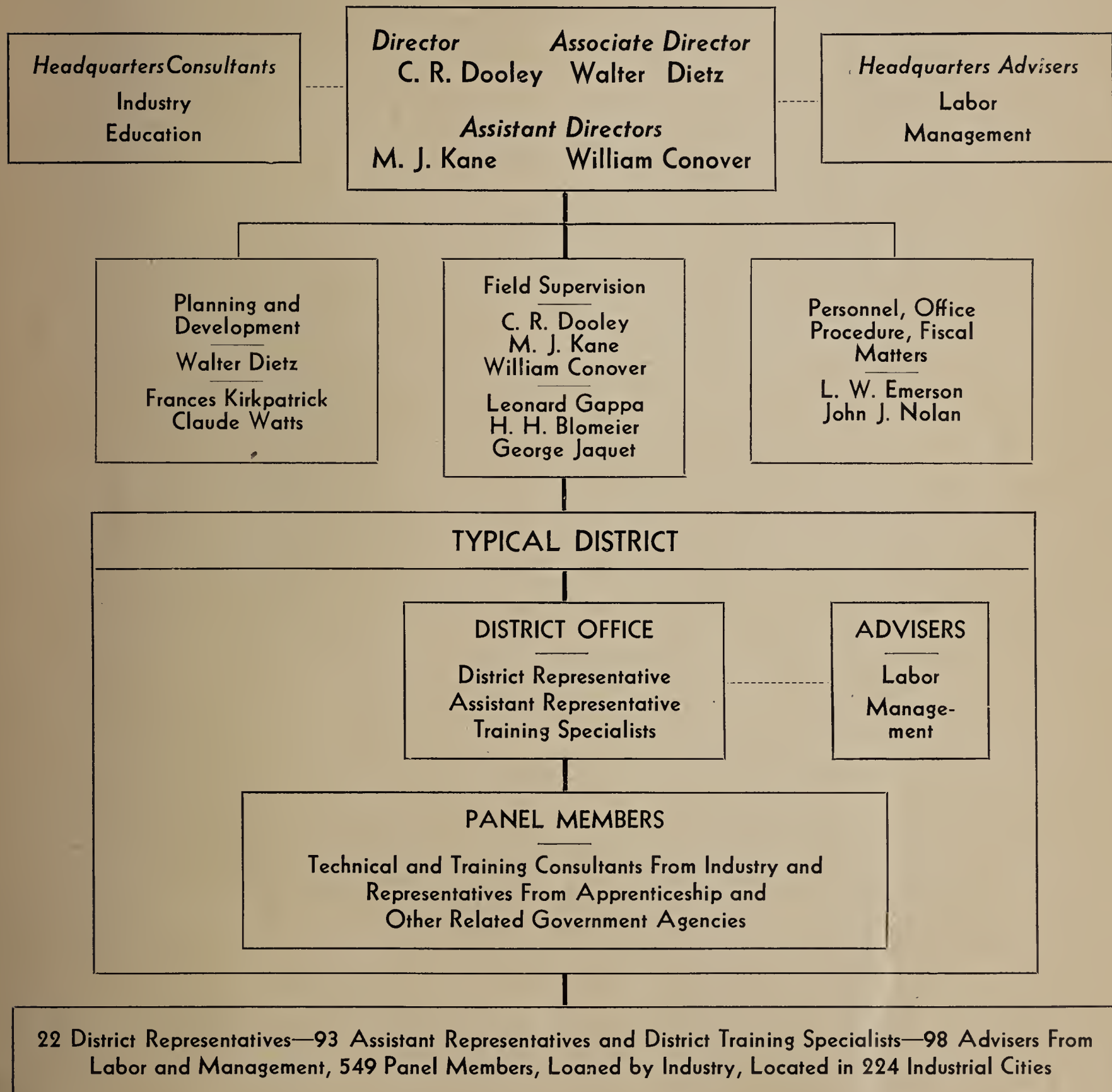
C. J. WHIPPLE,
Hibbard, Spencer, Bartlett & Co.

Mr. Fenton, Mr. Gillmor, Mr. Irwin, and James J. Matles, of the United Electrical and Radio Workers (alternate for Mr. Golden), are members of the Advisory Subcommittee for liaison between the Training Within Industry Division and the Management-Labor Policy Committee.

Training Within Industry has been guided by a Committee of Labor and Management Advisers which approved the first statement of the program on September 18, 1940, and issued the first "TWI" Policy statement in April 1941. The above policy statement continues the basic policy originally established. The members of the original committee were: M. F. Burke, C. S. Ching, E. O. Davidson, Clinton S. Golden, John Green, M. H. Hedges, R. Randall Irwin, W. G. Marshall, K. F. Ode, Walter P. Reuther, E. J. Robeson, and John E. Rooney.

WAR MANPOWER COMMISSION
TRAINING WITHIN INDUSTRY
ORGANIZATION

Headquarters: Room 4762, Social Security Building
Fourth St. and Independence Ave. SW., Washington, D. C.
Executive 4660



FIELD ORGANIZATION



In addition to the names shown, each district staff includes ten or more panel consultants who are not listed

DISTRICT	Office Address	Representative
1	Northern New England Maine, Massachusetts, Vermont, New Hampshire Room 1035, Park Square Building, Boston, Mass. (Hubbard 0380)	Harry H. Kerr, Boston Gear Works, Inc.
2	Southern New England Connecticut, Rhode Island Room 513, 152 Temple Street, New Haven, Conn. (6-5186)	Joseph Eugene Moody, Hat Corp. of America
3	Upstate New York New York State (exclusive of Metropolitan New York)	Sterling W. Mudge, Acting Representative
4	Metropolitan New York Room 2026, 11 West 42nd Street, New York, N. Y. (Murray Hill 3-6805)	Sterling W. Mudge, Socony Vacuum Oil Co.
5	New Jersey Room 601, 605 Broad Street, Newark, N. J. (Mitchell 2-1114)	Glenn L. Gardiner, Forstmann Woolen Co.
6	Eastern Pennsylvania and Delaware Room 1740, 12 South 12th Street, Philadelphia, Pa. (Locust 3400)	H. W. Jones, The Atlantic Refining Co.
7	Maryland Room 3106, Baltimore Trust Building, Baltimore, Md. (Plaza 8170)	James H. Kahlert, Bendix Radio Corp.
8	Atlantic Central Virginia, North and South Carolina Raleigh Building, Fayetteville and Hargett Streets, Raleigh, N. C. (2-3306)	George G. Arthur The Champion Paper & Fibre Co.
9	Southeastern Georgia, Florida, Alabama, Mississippi, Central and Eastern Tennessee Georgia School of Technology, 225 North Avenue NW., Atlanta, Georgia. (Hemlock 6890)	A. S. Hotchkiss, Tennessee Coal, Iron & Railroad Co.
10	Ohio Valley Southern Ohio, Southern West Virginia, Kentucky Room 703-705, Union Trust Building, Cincinnati, Ohio. (Cherry 3740)	Paul Mooney, Kroger Grocery and Baking Co.
11	Western Pennsylvania (except Erie County) and Northern West Virginia. Room 360, Administration Building, Carnegie Institute of Technology, Pittsburgh, Pa. (Mayflower 2600)	C. S. Coler, Westinghouse Electric & Manufacturing Co.
12	Northern Ohio (except Lucas County) and Erie County, Pa. 4th Floor, Union Commerce Building, Chester and Ninth Streets, Cleveland, Ohio. (Cherry 5975)	Oscar Grothe, White Sewing Machine Co.

Labor Advisers—	Management Advisers—	DISTRICT
Joseph J. Kelleher, Worcester Industrial Union Council, CIO J. Arthur Moriarty, Boston Typographical Union	Clarence G. McDavitt, New England Tel. & Tel. Co. Everard Stubbs, Fellows Gear Shaper Co.	1
J. H. DeCantillon, International Association of Machinists Thomas Kearney, International Brotherhood of Electrical Workers	Carl A. Gray, Grenby Manufacturing Co. Richmond Viall, Brown & Sharpe Mfg. Co.	2
(To be appointed)	(To be appointed)	3
Thomas J. Lyons, N. Y. State Federation of Labor Gustave A. Strebel, N. Y. State Industrial Union Council John J. Brennan, Alternate, Building and Construction Trades Council	D. J. Hoose, The Texas Co. R. E. Gillmor, Sperry Gyroscope Co., Inc. J. C. Ward, Jr., Fairchild Engine & Airplane Corporation	4
Peter J. Flynn, Industrial Union of Marine & Shipbuilding Workers of America Carl L. Gylling, International Association of Machinists	Thomas R. Jones, American Type Founders, Inc.	5
Anthony Martinez, Steel Workers Organizing Committee Carl Bersing, Philadelphia Industrial Union Council Charles Schl, International Association of Machinists David Williams, Pennsylvania Federation of Labor	Earl Sparks, Metal Manufacturers Association L. B. F. Raycroft, Electric Storage Battery Co.	6
Frank J. Bender, Regional Director, CIO F. N. Kershaw, International Association of Machinists	Alonzo G. Decker, Sr., The Black & Decker Mfg. Co. Stewart Cort, Bethlehem Steel Co. Charles R. Hook, Jr., Rustless Iron and Steel Co.	7
E. L. Sandefur, Director, CIO T. A. Wilson, North Carolina Industrial Commission C. A. Fink, North Carolina State Federation of Labor	Edward J. Robeson, Jr., Newport News Shipbuilding & Dry Dock Co. Frederick W. Symmes, Union Buffalo Mills Co.	8
Paul R. Christopher, Tennessee State Industrial Union Council Dewey L. Johnson, Georgia Federation of Labor Charles Gramling, American Federation of Labor	B. W. Sinclair, Georgia Power Co. James F. Vance, Tennessee Coal, Iron & Railroad Co.	9
John J. Hurst, Central Labor Council	Lewis M. Crosley, The Crosley Corporation George A. Seyler, The Lunkenheimer Co.	10
Clinton Golden, Steel Workers Organizing Committee, CIO William G. Shord, Director, International Brotherhood of Electrical Workers	W. G. Marshall, Westinghouse Electric & Manufacturing Co. Henry D. Scott, Wheeling Steel Corporation	11
Albert Dalton, Cleveland Building and Construction Trades Council	Ray S. Livingstone, Thompson Products Co. Warner Seeley, Warner-Swasey Co.	12

FIELD ORGANIZATION



In addition to the names shown, each district staff includes ten or more panel consultants who are not listed

DISTRICT	Office Address	Representative
13	Michigan and Lucas County, Ohio 15 Boulevard Building, 1st floor, 7310 Woodward Avenue, Detroit, Mich. (Trinity 1-5500)	M. M. Olander, Owens-Illinois Glass Co. O. F. Carpenter, Associate Representative
14	Indiana (except Lake and Porter Counties) Room 1428, Circle Tower Building, Indianapolis, Ind. (Market 9411)	A. E. Sinclair, P. R. Mallory & Co.
15	Mid-West (except 3 counties adjacent to St. Louis, Mo.), 2 counties in Indiana, and 1 county in Iowa Room 2600, 20 North Wacker Drive, Chicago, Ill. (Andover 3600)	Paul A. Mertz, Sears Roebuck & Co.
16	North Central Minnesota, North Dakota, South Dakota, Iowa (except 1 county), Nebraska 326 Midland Bank Building, Minneapolis, Minn. (Maine 3244)	Ernest L. Olrich, Munsingwear, Inc.
17	South Central Missouri, Kansas, Oklahoma, Arkansas, Western Tennessee, and 3 counties in Illinois Room 603, Shell Building, St. Louis, Mo. (Central 4206)	A. Earl Wyatt, Laclede Gas Light Co.
18	Gulf District Texas and Louisiana Room 3201, Gulf Building, Houston, Tex. (Capitol 7201)	Tracy T. Word, Acting Representative
19	Mountain District Colorado and Wyoming 7th floor 511 Sixteenth Street, Kittredge Building, Denver, Colo. (Tabor 3173)	George M. Kirk, Colorado Fuel & Iron Corp.
20	Pacific Southwest Southern California, Arizona, New Mexico 755 Western Pacific Building, 10315 Broadway, Los Angeles, Calif.	Garner Beckett, Riverside Cement Co.
21	Pacific Central Northern California, Nevada, Utah Room 702, Newhall Building, 260 California Street, San Francisco, Calif. (Exbrook 0369)	Alexander R. Heron, Crown Zellerbach Corp.
22	Pacific Northwest Washington, Oregon, Idaho, Montana Room 957, Stuart Building, Fourth and University Streets, Seattle, Wash. (Eliot 6404) Oregon District Bedell Building, Room 1006, Portland, Oreg. (Broadway 0380)	Walter Williams, Continental, Inc.

Labor Advisers—

Management Advisers—

DISTRICT

John Reid,
Michigan State Federation of Labor
Walter P. Reuther,
United Automobile Workers of America

Willis H. Hall,
Detroit Board of Commerce
Frank Rising,
Automotive Parts & Equipment Manufacturers, Inc.

James C. Robb,
Steel Workers Organizing Committee, C. I. O.
Roy Creasey,
International Brotherhood of Electrical Workers

Henry C. Atkins, Jr.,
E. C. Atkins & Co.
Lothair Teetor,
The Perfect Circle Co.

George E. Mischeau,
Steel Workers Organizing Committee
Albert G. Fox,
Sheet Metal Workers Union Local 115, AFL
Otto A. Jirikowic,
International Association of Machinists
Paul H. Steffes,
United Auto Workers Local 75
Terry Kandal, Alternate,
United Auto Workers Local 719

Harold F. North,
Swift & Company
L. J. Parrish,
A. O. Smith Corporation.
H. A. Schauer, Alternate,
Hasco Valve Co.

Sander Genis,
Congress of Industrial Organizations
George Lawson,
Minnesota Federation of Labor

Harry W. Clark,
Hugo Manufacturing Co.
Fred Crosby,
American Hoist & Derrick Co.
C. L. Mandelert,
Chippewa Falls Woolen Mill Co.
Herbert J. Miller,
Minnesota State Resources Commission
Gust Olson, Jr.,
Deere & Co.
Karl Vogel,
Omaha Steel Works

Joseph P. Clark,
Central Trades & Labor Union of St. Louis and vicinity
A. F. Kojetinsky,
Steel Workers Organizing Committee
Lloyd M. McBride, Alternate,
Steel Workers Organizing Committee
Joseph A. Waldron, Alternate,
Metal Polishers, Buffers, Platers & Helpers International
Union

Wilbur B. Jones,
St. Louis Chamber of Commerce
Walter Siegerist,
Medart Co.

Clyde Ingram,
Congress of Industrial Organizations
A. S. McBride,
American Federation of Labor

David Harris,
Humble Oil & Refining Co.
Ed Lorehn,
Cameron Iron Works

Martin Cahill
Wyoming Federation of Labor
Floyd F. Miles,
Second Judicial Court, State of Colorado

Harold F. Silver,
Silver Engineering Works, Inc.
Charles O. Voigt,
The Stearns-Roger Manufacturing Co.
Adam S. Bennion,
Utah Power & Light Co.
C. T. Keigley,
Columbia Steel Co.

Cornelius J. Haggerty,
California Federation of Labor
James G. Thimmes,
Steel Workers Organizing Committee

David T. Babcock,
Blythe & Co., Inc.
A. H. Young,
California Institute of Technology

J. Scott Milne,
International Brotherhood of Electrical Workers

James R. Moore,
Moore Dry Dock Co.
Julian F. Arntz,
Bethlehem Steel Co.

H. S. McIlvaigh,
Tacoma Central Labor Council

Ernest R. Hinton,
Olympia Steel Works
Claire Bowman,
Morris H. Jones,
Jones Lumber Co.
Ross McIntyre,
International Sales & Produce Co.

D. E. Nickerson,
Oregon Federation of Labor

High Spots in the "TWI" Program

- 1 This is *not a policy-making program*. It gives no consideration to whom an employer shall hire, how many, or when.
- 2 It is a practical *advisory service*, dealing only with training methods and procedures. It disseminates the latest, factual information based on *current experience of industry*.
- 3 It is concerned only with training carried out right on the job within plants. *Workers learn by doing—produce while learning!*
- 4 It shows employers how to *get skilled operation from all grades of workers* through intensive instruction at the job level.
- 5 It aids in the development of *practical plans for upgrading workers* to higher skilled jobs as rapidly as their ability warrants.
- 6 It renders specific aid to plants in the *development of foremen and leadmen* so that they become better supervisors.
- 7 "TWI" cooperates with the Apprentice-Training Service in promotion of attention to the *development of all-round skilled craftsmen*.
- 8 It works for *closer cooperation* between local industry and local governmental placement and training in order to meet employers' definite needs.
- 9 The entire "TWI" program is carried on with the advice and *backing of both labor and management*.
- 10 Training Within Industry service is rendered by *experienced industrial personnel and training experts loaned to the War Manpower Commission by industry itself*.

CONTACT YOUR NEAREST "TWI" DISTRICT OFFICE FOR COMPLETE DETAILS